Single-stub tuning

1) Normalize $Z_L \rightarrow Z_{LN}$
2) Plot $Z_{LN}$ on Smith Chart
3) Find $Y_{LN}$ (Admittance)
4) Rotate until hitting the unit conductance circle $\Rightarrow R_1$
5) Find $l_2$ of shorted stub to give $-jX \Rightarrow l_2$

Example 1
$Z_L = 100 + j100 \Rightarrow Z_{LN} = 2 + j2$ (for $Z_0 = 50$)
The Complete Smith Chart
Black Magic Design